FOMIN, V.N., inzh.

Automatic line for cleaning castings. Mashinostroenie no.58
23-25 S-O '64 (MIRA 18:2)

[redacted]

[redacted] all automatic continuous casting line. Brit. [redacted] Inform. Cent. Metall.-Inst. Mat. Masch. i Bekn. Inform. [redacted]

FOMIN, V.N.

Automated line for cleaning abrasive finishing, and trimming the castings. Lit. proizv. no.11:10-13 N '64. (MIRA 18:8)

POMIN, V.N., inzh.

Automatic line for preparing and loading the charge into the cupola furnace. Mashinostroenie no.1:40-43 Ja-F '65. (MIRA 18:4)

FOMIN, V.N., inzh.

Automatic line for the preparation of the charge blend and the charging of a cupola furnace. Mekh. i avtom. proizv. 19 no.4: 7-10 Ap '65. (MIRA 18:6)

FOMIN, V.N., inzh.

Automatic loading and unloading of vertical drying furnaces. Mashinostroenie no.3:38-39 My-Je '55. (MLRA 18:6)

L 9417-66 EWT(d)/EWT(m)/EWP(w) IJP(c) EM

ACC NR: AP5027356 SOURCE CODE: UR/0043/65/000/004/0074/0086

AUTHOR: Fomin, V. N.

ORG: none

TITLE: Parametric resonance of elastic systems with an infinite number of degrees of freedom, 2

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 4, 1965, 74-86

TOPIC TAGS: elasticity, elasticity theory, dynamic behavior, dynamic stability, Hamilton equation

ABSTRACT: This article is a continuation of the author's previous work (Parametricheskiy resonans uprugikh sistem s beskonechnym chislom stepeney svobody. I. Vestnik LGU, No. 13, 1965) dealing with the problem of the stability of the quasi-Hamilton equation

$$I\frac{d}{d\tau}(Px)=\frac{1}{\theta}[I+\varepsilon H(\tau)]x.$$

Satisfaction of the following conditions is proposed: 1) F is a self-conjugate wholly continuous operator in Gilbert space H, and has the unbounded inverse F^{-1}, 2) the 2π periodical operator function $H(\tau)$ is subordinate to the operation F^{-1} in the sense

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L 9417-66

ACC NR: AP5027356

that for each $\tau \in [0, 2\pi]$ the operators $F^{-1}H(\tau)$ and $F^{-1}H^*(\tau)^*$ (where H* denotes the operator which is the conjugate of H in the space of H) are bounded and vary continuously with their argument. The positive parameters ε and θ characterize the amplitude and frequency of excitation; $\tau = \theta t$ is dimensionless time and I is the unit (identity) operator in space H. Some discussion of the conclusions of article I is presented. Article II deals with the case in which "parametric excitation" is small, being directed toward defining the characteristic exponents of the equation given above. A theorem is stated which gives a first approximation to the characteristics in a matrix form. An additional lemma and theorem are stated for the purpose of simplifying the identity of matrix elements. A second order approximation algorithm is stated and is based upon the use of first order approximation and the uses of linear operators defined in I. The relationship between the first and second order methods is discussed. The simplist case of friction in equations of the theory of stability of elastic systems is examined. Orig. art. has: 27 equations and 5 theorms.

SUB CODE: 20, 13/ SUBM DATE: 25May64/ ORIG REF: 005

Card 2/2

FOMIN, V.N.

Parametric resonance of elastic systems with an infinite number of degrees of freedom. Part 2. Vest. LGU 20 no.19:74-86 '65.
(MIRA 18:10)

L 00815-66 EWT(d) IJP(c)

ACCESSION NR: AP5020820 UR/0020/65/163/004/0830/0833

AUTHOR: Fomin, V. N. 55

TITLE: Method of perturbations in the theory of dynamic stability of systems with distributed parameters

SOURCE: AN SSSR. Doklady, v. 163, no. 4, 1965, 830-833

TOPIC TAGS: differential equation, Hilbert space

ABSTRACT: The author considers

$$i\frac{d}{dt}Fx = [I + \mathcal{H}(\tau)]x, \quad \tau = 0t, \quad i = \sqrt{-1}, \qquad (1)$$

where F is a self adjoint completely continuous operator on Hilbert space H with unbounded inverse and the operator function $\mathcal{H}(\tau)$ is such that $F^{-1}\mathcal{H}(\tau)$ is uniformly continuous on $[0, 2\pi]$ with uniformly continuous derivative. Let S_0 be the closure of $i\frac{d}{d\tau} - \frac{1}{\theta}F^{-1}$ and let S_1 be defined by $S_1 y = -\frac{1}{\theta}(F^{-1}\mathcal{H}(\tau))' y(\tau)$. The author proves the following four theorems. Theorem 1. The operator solution X(t) of the Hamiltonian equation (1), defined by the solution x(t) by the formula x(t) = X(t)x(0), can be represented in the form

$$X(t) = U(t) + V(t), \qquad (2)$$

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where for each t the operator $U(t)$ is unitary and $V(t)$ is completely continuous.

Theorem 2. If λ is an eigenvalue of the operator $S_0 + S_1$, then the number $\exp(2\pi i \lambda)$ is an eigenvalue of the operator $X(2\pi\theta^{-1})$. Conversely, if ρ is an eigenvalue of the operator $X(2\pi\theta^{-1})$, then the numbers $(2\pi i)^{-1} \ln \rho$ for any branch of the logarithm are eigenvalues of the operator $S_0 + S_1$. If the point $\exp(2\pi i \lambda)$ belongs to the domain of regularity of the operator $X(2\pi\theta^{-1})$, then the points $\lambda + k$, k an integer, belong to the domain of regularity of the operator $S_0 + S_1$.

Theorem 3. In order for the number λ, satisfying the condition $\|\delta^{-1}(\lambda - \lambda_0)I - S_1\| < 1$, to be an eigenvalue of the operator $S_0 + S_1$, it is necessary and sufficient that this number be an eigenvalue of the operator $\Phi(\delta, \lambda, \lambda_0)$, extendable in the subspace $(I-P_\delta)L_2$ by a matrix with matrix elements

$$\Phi_{kl}(\delta, \lambda, \lambda_0) = [(S_0 + S_1)x_l, x_k] - [S_1(I + (S_0 - \lambda_0 I)^{-1}P_\delta(S_1 - (\lambda - \lambda_0)I))^{-1}(S_0 - \lambda_0 I)^{-1}P_\delta S_1 x_l, x_k], \quad (3)$$

where $\{x_k\}$, $k = 1,2,\ldots$ is an orthonormalized basis in the subspace $(I-P_\delta)L_2$.

Theorem 4. Given any positive numbers ε, C, θ_0, and θ_1, where $\theta_0 < \theta_1$, there is a natural number N_0 such that for all $N > N_0$ we have the estimate

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$$|\rho(\mathcal{H}, \theta) - \rho_N(\mathcal{H}, \theta)| < \varepsilon \qquad (4)$$

for all $\mathcal{H}$ and θ satisfying the conditions

$$\max_{\tau \in [0, 2\pi]} \|F^{-1}\mathcal{H}(\tau)\| \leqslant C, \quad \theta_0 \leqslant \theta \leqslant \theta_1. \qquad (5)$$

Orig. art. has: 5 formulas.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University)

SUBMITTED: 04Jan65 ENCL: 00 SUB CODE: MA

NO REF SOV: 002 OTHER: 000

Card 3/3

FOMIN, V.N.

Parametric resonance of elastic systems with distributed parameters. Dokl. AN SSSR 164 no.1:58-61 S '65. (MIRA 18:9)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova. Submitted February 8, 1965.

PARZYAN, Karp TSolakovich; FOMIN, Vitaliy Nikolayevich; SHNEYDERMAN, K.A., red.

[The youth of an old foundry] Molodost' starogo tsekha. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1965. 86 p. (MIRA 18:12)

1. Nachal'nik liteynogo tsekha serogo chuguna zavoda Rostsel'mash, Rostov-na-Donu (for Parzyan). 2. Zamestitel' glavnogo metallurga zavoda Rostsel'mash, Rostov-na-Donu (for Fomin).

FOMIN, V.N., inzh.

Automatic line for making molds. Mashinostroenie no.6:5-8 N-D '65. (MIRA 18:12)

FOMIN, V.N., inzh.

Automatic line for making molds. Mekh. i avtom. proizv. 19 no. 10:1-3 O '65. (MIRA 18:12)

L 20986-66 EWT(1)/ IJP(c) WW/GG

ACCESSION NR: AP5019930 UR/0043/65/000/003/0073/0087

23
22
B

AUTHOR: Fomin, V. N.

TITLE: Parametric resonance in elastic systems having an infinite number of degrees of freedom. I

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 3, 1965, 73-87

TOPIC TAGS: dynamic stability, parametric resonance, linear system, approximation method

ABSTRACT: Parametric excitation of linearized systems with an infinite number of degrees of freedom is described, and a perturbation method is developed to study the dynamic stability of a system with distributed parameters. The question of the relation of such a system to a finite system obtained by Galerkin's first method is investigated. An approximation method is proposed for finding the system's characteristic indices in the right half-plane. The correspondence between the exact value of a quantity characterizing instability in the Hamiltonian equation and its

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L 20936-66

ACCESSION NR: AP5019930

approximate value in the first approximation is considered. The effect of friction on the stability of a system with an infinite number of degrees of freedom is also considered. "Used in this paper are many results of various authors who have done research in systems having a finite number of degrees of freedom, particularly the results of V. A. Yakubovich, who drew the author's attention to the series of problems considered here." Orig. art. has: 57 formulas.

ASSOCIATION: none

SUBMITTED: 01Mar64 ENCL: 00 SUB CODE: MA

NO REF SOV: 014 OTHER: 002

Card 2/2 BK

ACC NR: AT6022617 (A) SOURCE CODE: UR/3040/65/000/004/0072/0075

AUTHOR: Fomin, V. N.

ORG: none

TITLE: An algorithm for recognition 16 systems

SOURCE: Leningrad. Universitet. Kafedra vychislitel'noy matematiki i Vychislitel'nyy tsentr. Vychislitel'naya tekhnika i voprosy programmirovaniya, no. 4, 1965, 72-75

TOPIC TAGS: algorithm, approximation solution, character recognition, pattern recognition

ABSTRACT: Some problems in the design of recognition systems make it necessary to find recurrent decision algorithms for systems of large numbers of linear inequalities. This paper shows how such inequalities may be obtained and presents an algorithm for finding their solutions. Elements x of set X (the "image space," which may be considered a closed unitary cube in Euclidean space) are fed to the recognition system input; $a_j(x)$ represents the functions of a-elements; the reaction $s_N(u, x)$ of the recognition system to element $x \in X$ is determined by

$$s_N(u, x) = \sum_{i=1}^{N} u_i a_i(x), \quad (1)$$

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ACC NR: AT6022617

where $u = (x_1, x_2, \ldots, x_N)$ is a vector with numerical components termed the weights of the a-elements. It is assumed that the weights may be varied within certain limits; this also makes possible the recognition system reaction to elements $x \in X$. The algorithm proposed is true of a system of m inequalities, $[c_j, u] - \delta_j > 0$, which is known to be soluble. The algorithm is stated in the form of a theorem and is also applicable to find approximate solutions of equation systems whose coefficient matrix has a determinant close to zero. Orig. art. has: 5 formulas.

SUB CODE: 06,12/ SUBM DATE: 12Feb65/ ORIG REF: 002

Card 2/2

L 38788-66 EWP(m)/EWP(j)/EWT(l)/EWT(m)/EWP(e) RM/IG/WW

ACC NR: AP6025925 SOURCE CODE: UR/0208/66/006/004/0714/0726

AUTHOR: Fomin, V. N. (Moscow)

ORG: none

TITLE: Hypersonic gas flow past blunt bodies with radiation taken into account

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 6, no. 4, 714-726

TOPIC TAGS: hypersonic aerodynamics, hypersonic flow, radiation, shock wave, luminescence, inviscid flow, detached shock wave, radiation effect

ABSTRACT: The method of integral relations is applied to the solution of hypersonic air flows past blunt, axisymmetric bodies with radiation taken into account. The calculation procedure is based on the use of an approximation of functions along the shock layer. The limiting state of the gas (volume luminescence) -- in which absorption can be negelcted -- is considered. A complete system of gasdynamic equations describing the inviscid, non-heat-conducting, equilibrium, nonrelativistic gas flow is derived and solved in the second approximation. Calculations were carried out for the flow region limited by the shock wave, symmetry axis, the surface of the body, and the characteristic drawn between body and shock wave with and without taking radiation into account in order to check the accuracy of the analytical procedure. The maximum discrepancy of 2—3% was found on the boundary characteristic in the region of its intersection with the

Card 1/2 UDC: 517.9:533.7

L 38788-66

ACC NR: AP6025925

shock wave. In all other points in the flow the error was found to be about 0.5%. The results of a numerical calculation of the flow past a sphere 1 m in diameter with radiation taken into account in the range of M_∞ = 10—35, ρ_∞ = 0.01—0.00001 atm, T_∞ = 220—300K presented in graphs and a table show that the effect of radiation substantially depends on M_∞ and ρ_∞ and also on R_e. The magnitude of the shock-wave detachment distance decreases when radiation is taken into account, and this is particularly evident in the stagnation point region though less so in the region of the characteristic. The procedure described here for air flow may also be used for various gas mixtures. Orig. art. has: 8 figures, 25 formulas and 1 table. [AB]

SUB CODE: 20/ SUBM DATE: 20Nov65/ ORIG REF: 010/ OTH REF: 001/ ATD PRESS: 5151

Card 2/2

tion $\frac{dx}{dt} = Cx.$

Formulas are also derived for the calculation by successive approximations of characteristic exponents for perturbed systems with periodic coefficients, for a vector equation of [illegible] with multiparametric perturbations. Some conclusions

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L 09441-67

ACC NR: AT6024069

are made concerning the effect of combinatory resonance on the stability of elastic systems. Orig. art. has: 175 formulas.

SUB CODE: 12/ SUBM DATE: 16Apr63/ ORIG REF: 011/ OTH REF: 006

Card 2/2

FOMIN, V.P.; KHAZOV, A.N.

Device for locating boreholes from mine stopes. Gor. zhur. no.2: 50-52 F '58. (MIRA 11:3)
(Mining engineering) (Magnetic instruments)

SHESTOPALOV, P.I., inzh.; FOMIN, V.P., inzh.; FILATOVA, G.P., inzh.; GROMOV, I.V., nauchn.sotr.; STEPANOVA, I.N., red.

[Fishing in the Amur River] Rybolovstvo na Amure. Vladivostok, TSentr. biuro tekhn. informatsii, 1962. 103 p. (MIRA 18:1)

1. Amurskoye otdeleniye Tikhookeanskogo instituta rybnogo khozyaystva (for Gromov).

FOMIN, V.S.

Methods of prolonged surface anesthesia and its use in diseases of the peripheral nervous system. Vop.kur.fizioter. i lech.fiz.kul't. 21 no.4:111-112 O-D '56. (MLRA 9:12)
(LOCAL ANESTHESIA) (NERVOUS SYSTEM--DISEASES)

FOMIN, V.S., kand.med.nauk

Prolonged anesthesia method in the treatment of neuraligic syndromes. Sov.med. 22 no.3:117-118 Mr '58. (MIRA 11:4)
(NEURALGIA, ther.
phenol-tetracaine prep. in neuralgic synd. (Rus))
(ANESTHETICS, LOCAL
tetracaine-phenol prop. in neuralgic synd. (Rus))
(PHENOLS, ther. use
phenol-tetracaine prep. in neuralgic synd. (Rus))

VOLYNKIN, Yu.M.; YAZDOVSKIY, V.I., prof.; GENIN, A.M.; GAZENKO, O.G.; GUROVSKIY, N.N.; YEMEL'YANOV, M.D.; MIKHAYLOVSKIY, G.P.; GORBOV, F.D.; SERYAPIN, A.D.; BAYEVSKIY, R.M.; ALTUKHOV, G.V.; KOPANEV, V.I.; KAS'YAN, I.I.; MYASNIKOV, V.I.; TERENT'YEV, V.G.; BRYANOV, I.I.; FEDOROV, Ye.A.; FOMIN, V.S.; ARUTYUNOV, G.A.; ANTIPOV, V.V.; KOTOVSKAYA, A.R.; KAKURIN, L.I.; TSELIKIN, Ye.Ye.; USHAKOV, A.S.; VOLOVICH, V.G.; SAKSONOV, P.P.; YEGOROV, A.D.; NEUMYVAKIN, I.P.; TALAPIN, V.F.; SISAKYAN, N.M., akademik, red.; KOLPAKOVA, Ye.A., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[First group space flight; scientific results of medical and biological studies carried out during the group orbital flight of manned satellites "Vostok-3" and "Vostok-4] Pervyi gruppovoi kosmicheskii polet; nauchnye rezul'taty mediko-biologicheskikh issledovanii, provedennykh vo vremia gruppovogo orbital'nogo poleta korablei-sputnikov "Vostok-3" i "Voskot-4." Moskva, Izd-vo "Nauka," 1964. 153 p. (MIRA 17:3)

VOLYNKIN, Yu.M.; ARUTYUNOV, G.A.; ANTIPOV, V.V.; ALTUKHOV, G.V.; BAYEVSKIY, R.M.; BELAY, V.Ye.; BUYANOV, P.V.; BR[illegible]OV, I.I.; VASIL'YEV, P.V.; VOLOVICH, V.G.; GAGARIN, Yu.A.; GENIN, A.M.; GORBOV, F.D.; GORSHKOV, A.I.; GUROVSKIY, N.N.; YESHANOV, N.Kh.; YEGOROV, A.D.; KARPOV, Ye.A.; KOVALEV, V.V.; KOLOSOV, T.A.; KORESHKOV, A.A.; KAS'YAN, I.I.; KOTOVSKAYA, A.R.; KALIBERDIN, G.V.; KOPANEV, V.I.; KUZ'MINOV, A.P.; KAKURIN, L.I ; KUDROVA, R.V.; LEBEDEV, V.I.; LEBEDEV, A.A.; LOBZIN, P.P.; MAKSIMOV, D.G.; MYASNIKOV, V.I.; MALYSHKIN, Ye.G.; NEUMYVAKIN, I.P.; ONISHCHENKO, V.F.; POPOV, I.G.; PORUCHIKOV, Ye.P.; SIL'VESTROV, M.M.; SERYAPIN, A.D.; SAKSONOV, P.P.; TERENT'YEV, V.G.; USHAKOV, A.S.; UDALOV, Yu.F.; FOMIN, V.S.; FOMIN, A.G.; KHLEBNIKOV, G.F.; YUGANOV, Ye.M.; YAZDOVSKIY, V.I.; KRICHAGIN, V.I.; AKULINICHEV, I.T.; SAVINICH, F.K.; STMPURA, S.F.; VOSKRESENSKIY, O.G.; GAZENKO, O.G., SISAKYAN, N.M., akademik, red.

[Second group space flight and some results of the Soviet astronauts' flights on "Vostok" ships; scientific results of medical and biological research conducted during the second group space flight] Vtoroi gruppovoi kosmicheskii polet i nekotorye itogi poletov sovetskikh kosmonavtov na korabliakh "Vostok"; nauchnye rezul'taty medikobiologicheskikh issledovanii, provedennykh vo vremia vtorogo gruppovogo kosmicheskogo poleta. Moskva, Nauka, 1965. 277 p. (MIRA 18:6)

VASIL'YEV, V.I., inzh.; FOMIN, V.S.

Experience in simultaneous assembling of structural elements and equipment during the construction of a sugar plant. Prom. stroi. 41 no.4:25-28 Ap '64. (MIRA 17:9)

FOMIN, V.S., inzhener.

Sliding type of blowoff device for convective heating surfaces.
Energomashinostroenie no.11:6 N '56. (MLRA 9:12)
(Boilers--Accessories)

37589

S/137/62/000/005/137/150
A052/A101

12700

AUTHORS: Kartyshov, A. V., Fomin, V. S.

TITLE: Welding in CO_2 atmosphere

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 34, abstract 5E166 ("Proizv.-tekhn. sb. Tekhn. upr. M-va rechn. flota RSFSR", no. 7(19), 1961, 52 - 55)

TEXT: The experience of the Krasnoyarsk shipyard in arc-welding in CO_2 is described. The installation for welding in CO_2 used at the shipyard consists of ПШ-5 (PSh-5) semiautomatic machine with a monitor cabinet and the power source, - ПС-300М (PS-300M) generator -, of gas equipment consisting of a cylinder with O_2-reductor, gas heater and drier, and a special holder for welding in CO_2. PS-300M generator was modified with the purpose of obtaining a rigid characteristic. As a gas envelope commercial CO_2 is used. Св-08ГС (Sv-08GS) electrode wire of 1 and 1.2 mm in diameter is used for welding. A stable arc burning is secured on reversed polarity. The electrode overhang is 10 - 12 mm, the arc length is 2 - 3.5 mm. At present 2 posts for welding in CO_2 are occupied

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S/137/62/000/005/137/150
A052/A101

Welding in CO_2 atmosphere

with welding superstructures and a third post is used for welding volume sections. The welding in CO_2 is also used for manufacturing welded "grebnykh opytov" (?) and for repairing casting defects in screw propeller blades and steel castings. A great advantage of this method is a considerable reduction of deformations, an improvement of the quality and appearance of welded seams, a reduction of production costs due to the economy of electric power and electrode wire.

V. Klyuchnikova

[Abstracter's note: Complete translation]

Card 2/2

.GAYDAMAK, K.M., inzh.; FOMIN, V.S., inzh.

Assembly of the technical equipment of the Timashevskaya sugar plant. Mont. i spet. rab. v stroi. 24 no.1:5-9 Ja '62. (MTRA 15:7)

1. Glavnoye upravleniye po montazhu tekhnologicheskogo oborudovaniya i proizvodstvu montazhnykh rabot Ministerstva stroitel'stva RSFSR i trest Yuzhtekhmontazh.
(Timashevskaya—Sugar manufacture)

L 27585-66

ACC NR: AP6018397 SOURCE CODE: UR/0239/65/051/011/1373/1374

AUTHOR: Fomin, V. S. (Moscow)

23
B

ORG: none

TITLE: Differential piezoceramic sensor for recording tachooscillograms of the brachial artery

SOURCE: Fiziologicheskiy zhurnal SSSR, v. 51, no. 11, 1965, 1373-1374

TOPIC TAGS: piezoelectric ceramic, manometer, medical laboratory instrument

ABSTRACT: The differential piezoceramic sensor proposed by the author differs from the differential manometer of the mechanocardiograph in that it contains a piezoceramic disk instead of a rubber diaphragm as the sensitive element. Its housing, together with a connecting link for attachment of rubber tube and screw-on lid, with connecting link, represents an airtight chamber with two apertures: one for connection to the air supply source and the other for connection to the cuff-link on the subject. This chamber is partitioned by piezoceramic disk 5, 30-mm in diameter, which separates it into two cavities. As the air is pumped through the connecting link into the lower cavity, the pressure in the cuff-link gradually increases, since the air enters through a tiny adjustable aperture into the upper cavity. Thus the air pressure in both cavities will be the same and the piezoelectric disk will remain in a non-

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UDC: 612.133.08

L 27585-66
ACC NR: AP6018397

stressed state. Following the appearance of a counter surge caused by oscillation of the artery, pressure in the upper cavity will exceed for a short time instant pressure in the lower cavity, thus causing the piezoelectric disk to bulge downward and hence to generate e.m.f. On relaxation of the arterial wall the direction of air pressure in the cavities becomes reversed, which reverses the polarity of the e.m.f. This new device may eliminate the obstacles to the industrial production of mechanocardiographs, which so far has been restricted by the insufficient reliability and sturdiness of the sensitive element and the necessity of consuming large amounts of expensive photomaterials. Thus, the mirror-type differential pressure gauge can be replaced with a sensor by means of which the mechanical oscillations of the sensitive diaphragm are converted to corresponding electrical signals, and the techniques of electrocardiography and electroencephalography can be applied to tachography as well. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 06, 09 / SUBM DATE: 22Jun64 /

Card 2/2

L 4211-66 EWT(1)/FS(v)-3 DD

ACC NR: AP5025711 SOURCE CODE: UR/0286/65/000/018/0064/0064

INVENTOR: Fomin, V. S.

ORG: none

TITLE: Device for investigating the excitability of the human vestibular analyzer. Class 30, No. 174757

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 64

TOPIC TAGS: vestibular analyzer, human physiology, vestibular test

ABSTRACT: An Author Certificate has been issued for a device for investigating the excitability of the human vestibular analyzer (see Fig. 1). It consists of a rotating

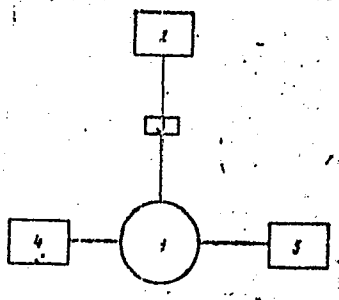

Fig. 1. Device for investigating the excitability of the human vestibular analyzer

1 - Rotating chair; 2 - control panel with hydraulic drive; 3 - reduction gear; 4 - device for optokinetic stimulation with screen and cylindrical mirror; 5 - recording devices.

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UDC: 612.886—78

L 4211-66
ACC NR: AP5025711

chair, reduction gear, power rectifier, signal lamps, measuring devices, and a slip ring. The assembly is distinguished by its hydraulic-drive system for the chair, which consists of reciprocating hydraulic pumps connected through a large-diameter reduction gear, which, in turn, is connected to the chair. Thus, in producing angular velocities and accelerations, it is possible to determine excitability threshold indices at a given moment during clockwise or counterclockwise direction and realize constant acceleration until manifestations of vestibulosensory, vestibulosomatic, and vestibuloautonomic reactions begin to develop. By virtue of its design, the device is smaller and lighter in weight, with minimum noise from the chair drive. Another variation of the device has a cylindrical mirror with spring-actuated drive. The edges of the mirror reflect vertical strips of light which move horizontally across the subject's visual field to produce optokinetic stimuli. Orig. art. has: 1 figure. [CD]

SUB CODE: LS/ SUBM DATE: 25Oct63/ ORIG REF: 000/ OTH REF: 000/ ATD PRESS: 4121

Card 2/2 DP

FOMIN, V.S., podpolkovnik meditsinskoy sluzhby, kand. med. nauk;
MIGULINA, M.A.

Method of polycardiography using an ink-writing apparatus.
Voen.-med. zhur. no. 1:85 Ja '66 (MIRA 19:2)

FOMIN, V.S. (Moskva)

Recording of electroencephalographic reactivity curves in man during a gradual compression of the shoulder. Zhur. vys. nerv. deiat. 16 no. 1:136-139 Ja-F '66 (MIRA 19:2)

1. Submitted June 21, 1964.

FOMIN, V.V., inzh.; CHEKAREV, I.I., inzh.

Shop workers give the example. Put'i put.khoz. 5 no.11:6-8 N '61. (MIRA 14:12)
(Railroads--Labor productivity)

FOMIN, V.V., inzh.

The "DG-10" hydraulic jack. Put' i put.khoz. 6 no.12:18-19 '62. (MIRA 16:1)
(Hydraulic jacks)

FOMIN, V.V., inzh.

New track liner. Put' i put.khoz. 6 no.2:43 '62. (MIRA 15:2)
(Railroads--Equipment and supplies)

FOMIN, V. V., inzh.

Stand for testing expansion devices. Put' i put. khoz. 6 no.8:33 '62. (MIRA 15:10)

(Railroads--Rails)

FOMIN, V. V., inzh.

New spike drawer. Put' i put. khoz. 6 no.9:35 '62.
(MIRA 15:10)

(Railroads—Tools and implements)

TRET'YAKOV, A.G., inzh.; FOMIN, V.V., inzh.

Gantry crane for the relocation and exchange of rails. Put' i put.khoz. 7 no.1:18-19 '63. (MIRA 16:3)

(Cranes, derricks, etc.)

FOMIN, V. V., inzh.

Improved rail joint expander. Put' i put. khoz. 7 no.3:15 '63.
(MIRA 16:4)

(Railroads—Equipment and supplies)

FOMIN, V.V.

Outstanding workers of workshops. Put' i put.khoz. 7 no.4:4-5 '63.
(MIRA 16:3)

1. Ramenskaya distantsiya puti Moskovskoy dorogi.
(Railroads—Maintenance and repair)

FOMIN, V.V.

Efficiency promoters help the collective. Put' i put. khoz. 7 no.6:44-45 '63. (MIRA 16:7)

1. Stantsiya Golta, Odessko-Kishinevskoy dorogi.
(Railroads—Rails—Welding)

FOMIN, V.V.

The aim of all innovations is to improve the production. Put' i put. khoz. 7 no.8:38-40 '63. (MIRA 16:9)
(Railroads--Technological innovations)

FOMIN, V.V.

Assumed obligations will be fulfilled. Put' i put.khoz. 7 no.9:26-28 '63. (MIRA 16:10)

1. Zhmerinskaya distantsiya Yugo-Zapadnoy dorogi.

FOMIN, V.V.

Creative activities of a collective. Put' i put. khoz. 7 no.11:38-39 '63. (MIRA 16:12)

1. Stantsiya Perm'-II, Sverdlovskoy dorogi.

FOMIN, V.V.

Improving the bar. Put' i put.khoz. 7 no.12:15 '63. (MIRA 16:12)

1. Slavyanskaya distantsiya Donetskoy dorogi.

FOMIN, V.V.

Semiautomatic unit for the repair of ties. Put' i put.khoz. 8 no. 4:27-28 '64. (MIRA 17:4)

FOMIN, V.V.

Made ' the skilled workers of the Northern Railroad. Put' i put'khoz. 8 no.8:36-37 '64. (MIRA 17:()

1. Stantsiya Yaroslavl'-Glanyy, Severnoy dorogi.

FIMIN, V.V.

Straightening device. Put' i put. khoz. 8 no.11:31 '64
(MIRA 18:2)

L 56681-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG
ACCESSION NR: AP5015961 UR/0128/65/000/006/0003/0004 16
669.141.25:66.046.51:621.744.527.7

AUTHOR: Fomin, V. V. (Candidate of technical sciences); Stekol'nikova, G. A. (Engineer)

TITLE: Increasing the erosion resistance of steel castings by surface alloying

SOURCE: Liteynoye proizvodstvo, no. 6, 1965, 3-4

TOPIC TAGS: erosion resistance, surface alloying, mold coating, diffusion alloying, steel casting

ABSTRACT: Results are given of a study of steel castings produced according to a method developed by V. N. Fomin (Author's Certificate No 109326, 1956 "A Method of Preparing Casting Molds with an Alloying Surface"). It was determined that an alloyed surface layer is formed basically as the result of the dissolution of the element in the mold coating by the liquid metal when the mold is filled: under these conditions diffusion processes occur both in the liquid and solid phases. Diffusion decreases with temperature reduction and is practically non-existent at 800°C. Tabulated results show that alloying with chromium increases the erosion

Card 1/2

L 56681-65
ACCESSION NR: AP5015961

resistance of steel castings by approximately 7 times. Castings alloyed with manganese exhibited high erosion resistance in fresh water but lower resistance in salt water. The best results were obtained by alloying with both chromium and manganese whereby the erosion resistance was approximately 12 times higher.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 001 OTHER: 000

ROMEN, V.V.

Mechanism of propeller erosion. Sudostroenie no.7:64-68 Jl '65.
(MIRA 18:8)

(N) L 10889-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) JD/WB

ACC NR: AP5028579 SOURCE CODE: UR/0148/65/000/011/0141/0147

AUTHOR: Fomin, V. V.

ORG: Murmansk Navigation School (Murmanskoye vysshyeye moryekhodnoye uchilishche)

TITLE: Cavitation resistance of stainless-steel ship propellers under operational conditions

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1965, 141-147

TOPIC TAGS: steel, stainless steel, ship propeller, propeller steel, steel cavitation, cavitation resistance

ABSTRACT: A series of stainless steels (see Table 1) were tested for cavitation resistance in a search for an inexpensive material for propellers of river- and sea-going ships. Tests were conducted under laboratory conditions and repeated under actual service conditions. The cavitation behavior was found to depend on the structure, phase composition, character of individual phases, and composition of the solid solutions. The austenite of chromium-manganese steels, such as 25Kh14G12, work hardens to a greater depth and hardness and has a higher cavitation resistance than the austenite of Kh18N9T chromium-nickel steel. Ferrite, as a rule, lowers cavitation resistance. Carbon and nitrogen in chromium-manganese steels suppress the ferrite formation and thus increase cavitation resistance. In addition, carbon and nitrogen form carbonitrides which also improve cavitation resistance. The best re-

Card 1/2 UDC: 669.14.018:620.193.16

ACC NR: AP5028579

sults in both types of test were obtained with age-hardenable steels, 1Kh16AG14, 20Kh16G14N3AF, and 0Kh16N4D4T, which showed a weight loss of 8.1, 5.9, and 18.2 mg respectively, in 10-hr laboratory tests, and fully austenitic 25Kh14G12 steel, whose

Table 1. Chemical composition, %

Steel designation	C	Cr	Mn	Ni	Cu	Ti	V	Other elements
1Kh14ND	0,09	14,0	0,46	1,26	1,34	—	—	—
0KH17N164D2T	0,85	16,6	4,2	3,04	1,86	0,07	—	—
30Kh14G6T	0,28	14,4	7,1	—	—	0,05	—	—
0Kh16N4D4T	0,08	15,7	1,2	4,3	4,2	0,15	—	—
Kh18N9T	0,12	18,7	1,4	8,6	—	0,8	—	—
25Kh14G12	0,24	14,6	12,4	—	—	—	—	—
1Kh16AG14	0,10	15,9	13,8	—	—	—	—	N_2
20Kh16G14N3AF	0,22	16,8	14,5	3,4	—	—	1,21	N_2
Kh25N5M	0,15	24,2	0,6	5,4	—	0,25	0,22	0,80% Mo

weight loss was 14.4 mg. No damage was observed in parts of propellers made of the steels tested (except for Kh25N5M and Kh18N9T) after three years operation in fresh and salt water. Orig. art. has: 6 figures and 3 tables. [DV]

SUB CODE: 11,13 / SUBM DATE: 26Jul65/ ORIG REF: 003/ ATD PRESS: 4170

Card 2/2

FOMIN, V.V.

Cavitation resistance of stainless steel in conditions of screw propeller operations. Izv. vys. ucheb. zav.; chern. met. 8 no.11:141-147 '65. (MIRA 18:11)

1. Murmanskoye vyssheye morekhodnoye uchilishche.

LYADOV, V.V.; POMIN, V.V., inzh. (Leningrad)

Thermite welding of rails. Put' i put. khoz. 9 no.1:22-23 '65
(MIRA 18:2)

1. Nachal'nik rel'sosvarochnogo poyezda No.1 Oktyabr'skaya doroga, Leningrad (for Lyadov).

FOMIN, V.V.

Welding innovators. Put' i put. khoz. 9 no.12:19-21 '65.
(MIRA 19:1)

L 04312-67 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6018265 (N) SOURCE CODE: UR/0133/66/000/002/0171/0173

AUTHORS: Fomin, V. V. (Candidate of technical sciences); Kazarnovskaya, I. I. (Engineer) 41

ORG: none 35 B

TITLE: Resistance of martensite and martensite-ferrite type steels to hydro-erosion

SOURCE: Stal', no. 2, 1966, 171-173

TOPIC TAGS: alloy steel, marine equipment, sea water corrosion

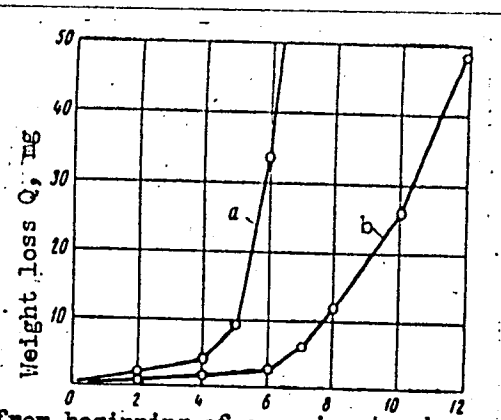
ABSTRACT: The resistance of 10 different martensite and martensite-ferrite types of steel to hydro-erosion was studied. The study was carried out with the aid of a magnetostriction vibrator as described by I. N. Bogachev and R. I. Mints (Kavitatsionnoye razrusheniye zhelezouglerodistykh splavov, Mashgiz, 1959). The rate of motion of the specimen was approximately 80 m/sec and the diameter was 8 mm. Several specimens were tested under natural conditions in sea water. The influence of annealing temperature on the flow impact resistance of the different steels was determined. Microstructure photographs of the specimens are presented. The experimental results are summarized in graphs and tables (see Fig. 1). It was found that the martensite and martensite-ferrite type steels acquire a high resistance to hydro-erosion as a result of quenching and annealing. Steels 1Kh14ND, 0Kh16N4D4T, and 30Kh14G6T possess high resistance to hydro-erosion and action of sea water. It is

Card 1/2 UDC: 620.193.16:669.15-194:669.26

L 04311-67

ACC NR: AP6018265

Fig. 1. Destruction curves for steel 18K2N4VA obtained in hydroerosion experiments:
(a) annealed state,
(b) quenched and annealed state.



recommended that steels 4Kh13, 20Kh13N, Kh18, and Kh10S2M be used in the construction of parts designed to operate under conditions of intensive cavitation. Orig. art. has: 1 table and 5 graphs.

SUB CODE: 11,13/SUBM DATE: none/ ORIG REF: 005

Stainless Steel /8

Card 2/2

L 03768-67 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WB /DJ

ACC NR: AP6019898 (N) SOURCE CODE: UR/0145/65/000/012/0088/0093

AUTHOR: Fomin, V. V. (Candidate of technical sciences); Marinin, A. A. (Engineer)

ORG: Murmansk Higher Naval Academy (Murmanskoye vyssheye morekhodnoye uchilishche)

53
46
3

TITLE: Kinetics of the hydroerosion of metals and alloys

SOURCE: IVUZ. Mashinostroyeniye, no. 12, 1965, 88-93

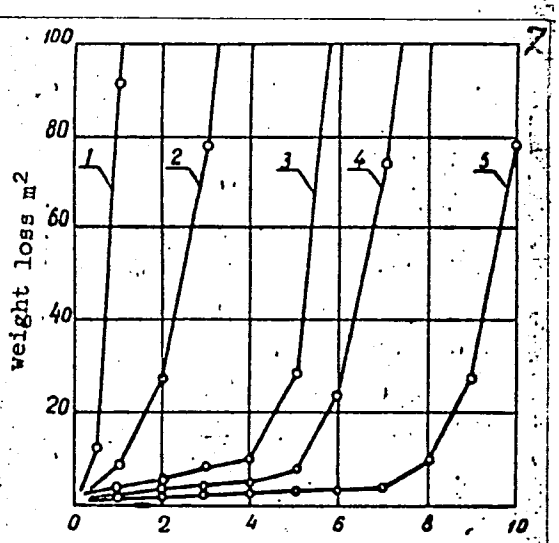
TOPIC TAGS: kinetic theory, erosion, hydraulic device, metal deformation, plastic deformation

ABSTRACT: The authors study the kinetics of the hydroerosion of metals and alloys. In studying hydroerosion, metals and alloys with various compositions were tested on a jet-impact unit at an impact velocity of 80 m/sec with an 8 mm nozzle diameter. The study showed that the velocity of collision of the speciemn and the jet of water is the determining factor with respect to fatigue. The resistance of metals or alloys to hydroerosion depends on many factors. Among them are the nature, structure and the presence of microscopic flaws. The test results for various metals and alloys are shown in the accompanying graph. These curves show that fatigue conforms to general laws with respect to microimpact. The hydroerosion of metal may be divided into two periods: the initial period which is characterized by deformation buildup, crack formation and fatigue foci, and the final period in which the specimen shows an intense

Card 1/3 UDC: 620.193.1+546.3-19

ACC NR: AP6019898

weight loss due to fatigue in specific microregions of the surface layer. The duration of the first period depends on the intensity of the microimpact effect and the resistance of the alloy to deformation. The development of the second period depends both on the nature of the alloy and on its microscopic flaws. A kinetic diagram is plotted from the experimental data for erosion characteristics. The first period relates to deformation of the weakest regions of the metal. As a result, a relief is formed on the surface of the specimen. After this, cracks and deformation foci are formed. The second period relates to intense metal fatigue. The analytic method is used for plotting the kinetic curve for erosion. This method makes it possible to determine the parameters and nature of erosion for a given alloy. The parameters are determined by the approximation of the experimental weight loss value of a specimen during testing. Expressions for calculating these parameters are



Specimen weight loss as a function of testing time on the jet-impact unit: 1--copper; 2--SCh 28-48 cast iron; 3--35L carbon steel; 4--Kh18N9T steel and 5--1Kh 14ND steel

L 03758-67

ACC NR: AP6019898

Given. The shape of the kinetic curve for erosion depends on the nature of the alloy, its structure and the presence of microscopic flaws. Orig. art. has: 3 figures, 2 tables, 9 formulas.

SUB CODE: 11/ SUBM DATE: 04Nov64

Card 3/3

L 35210-66 EWP(k)/EWT(d)/EWT(m)/T/EWP(1)/EWP(e)/EWP(v)/EWP(t)/ETI IJP(c)

ACC NR: AP6015247 (A) SOURCE CODE: UR/0125/66/000/005/0053/0053

54

52
B

AUTHOR: Kozulin, M. G.; Syatishev, A. P.; Fomin, V. V.

ORG: [Kozulin, Syatishev] Tol'yattinsk Volgotsemtyazhmash Heavy Cement Machinery Plant (Tol'yattinskiy zavod "Volgotsemtyazhmash"); [Fomin] Institute of Electric Welding im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki AN UkrSSR)

TITLE: Consumable-electrode electroslag welding of 400-mm thick Kh18N10T stainless steel

15 1 19 18

SOURCE: Avtomaticheskaya svarka, no. 5, 1966, 53

TOPIC TAGS: stainless steel, power transformer, electroslag welding, welding electrode/Kh18N10T stainless steel, TShS power transformer

ABSTRACT: Industrial techniques of welding of this kind, based on the use of A-645 welding machine powered by a TShS-3000-3 transformer, as performed at the Volgotsemtyazhmash Plant, are described. The consumable electrode was prepared in the form of three 5-mm thick plates of Kh18N10T sheet steel with four welded-on guide spirals of Sv-06Kh19N9T wire (diameter 3 mm). Inside diameter of the spiral: 5 mm. Outside diameter: 11 mm. On being thus assembled, this electrode was inserted in a holder. It was insulated from the work part by a fiberglass fabric. On both sides the joint was backed with wedge-reinforced water-cooled copper tacks. Recommended

Card 1/2

UDC: 621.791.756:669.15-194:669.26'24

ACC NR: AP6015247

welding regime: welding current 2500-3000 a, voltage 40-42 v, welding rate 220-240 m/hr, welding flux ANF-7, depth of weld pool 45-55 mm, clearance 35 mm. The welding occurs stably, without spatter and splash. Welding time for a specimen measuring 400x700 mm in area: 1 hr. No defects have been discovered afterward. This consumable-electrode technique of the electroslag welding of 400-mm thick Kh18N10T stainless Cr-Ni cast steel may be employed in the fabrication of flanges, hoops and other large-sized shapes for chemical industry. Orig. art. has: 1 figure and 1 table.

SUB CODE: 11,13,07/ SUBM DATE: 28Dec65/ ORIG REF: 000

Card 2/2

L 18868-66 EWT(m)/ETC(m)-6/T-2/EWA(d)/EWP(w)/EWP(t) EM/WW/JD/WB

ACC NR: AP6008070 (N) SOURCE CODE: UR/0032/66/032/002/0235/0236

AUTHOR: Fomin, V. V.; Milyakov, A. P.

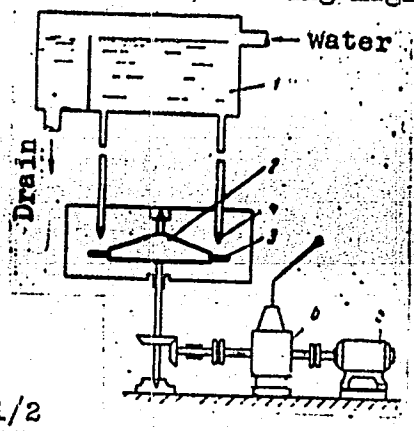
ORG: Murmansk Higher Navigation School (Murmanskoye vyssheye morekhodnoye uchilishche)

TITLE: Testing materials for resistance to erosion

SOURCE: Zavodskaya laboratoriya, v. 32, no. 2, 1966, 235-236

TOPIC TAGS: cavitation, marine engineering

ABSTRACT: After reviewing magnetostriction and water jet blast methods discussed in other Soviet papers (references given), the authors describe their own water-jet device for testing the erosion effect on metal surfaces. (See diagram). The device consisted of a tank (1) equipped with jet nozzles (4) and a disk (2) carrying two samples (3) and rotated by a 3000 rpm electric motor (5). By using a special speed regulator (6), the samples were tested at 40, 60, 80 and 100 m/sec. Martensite steel was tested



Card 1/2

UDC: 620.17

L 18868-66
ACC NR: AP6008070 /

at 100 m/sec while the tests of austenite steel were conducted at 80 m/sec. The 60 m/sec speed was used for steel of lower qualities. The comparative test of various steel samples was conducted at 80 m/sec. In some cases, the destructive effect was so strong that it was difficult to compare it with the erosion effect observed under normal operating conditions. A work-out of standard methods for testing the erosion effect was recommended. It was mentioned in the article that the service life of screw-propellers made of 25 L steel was from 1.5 to 2 years.

SUB CODE: 13 / SUBM DATE: None / ORIG REF: 003 / OTH REF: 000

Card 2/2

ACC NR: AP6035033 (N) SOURCE CODE: UR/0122/66/000/009/0059/0061

AUTHOR: Fomin, V. V. (Candidate of technical sciences, Docent); Mudrova, A. G. (Engineer)

ORG: none

TITLE: Hydroerosion resistance of titanium coated carbon steel

SOURCE: Vestnik mashinostroyeniya, no. 9, 1966, 59-61

TOPIC TAGS: erosion, titanium, metal diffusion plating

ABSTRACT: The samples were titanium coated at a temperature of 1100-1500°C in a reaction mixture of 15% fluorspar, 4% sodium fluoride, and 81% ferrotitanium, treated with hydrochloric acid. On the surface of the samples there was deposited a layer of the reaction mixture with a thickness of 2-3 mm, and then a layer of ordinary quartz sand with a binder. The duration of the process was 4-6 hours. Increasing the duration of the process did not substantially change the depth and the concentration of the diffusion layer. Increased activity of titanium is attained by previous treatment of the ferrotitanium with hydrochloric acid and by the presence of sodium fluoride in the reaction mixture. X ray analysis of the coating shows that at such a depth of the diffusion layer, the layer consists primarily of a mixture of the solid solution and the chemical compound Fe_2Ti. Hydroerosion tests were made on coatings

UDC: 620.193.1:669.14'295

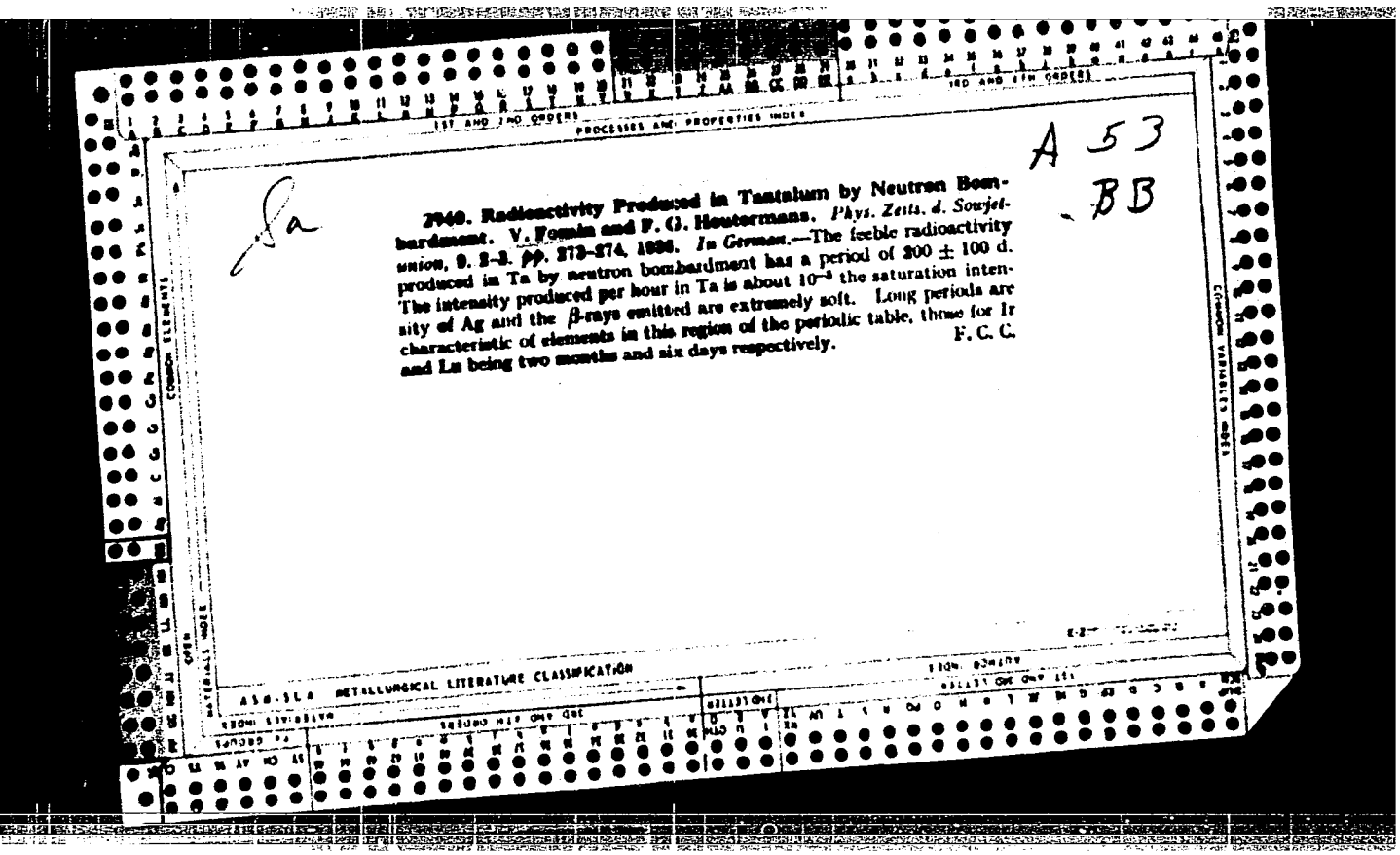
Card 1/2

ACC NR: AP6035033

prepared in this manner. Metallographic examination of the hydroerosion of the diffusion layer, saturated with titanium, shows that under jet action, there first appear traces of plastic deformation in the form of slip lines and twinning. There then appear at these locations microcracks which grow quickly and turn into failure sites. Failure takes place along the weak grain boundaries as well as in the grains themselves. Nevertheless, the data shows that the titanium coating method described in the article has the advantage of producing a deep diffusion layer with an increased concentration of titanium and rich in carbides, and which has a high degree of hardness. Orig. art. has: 3 figures and 1 table.

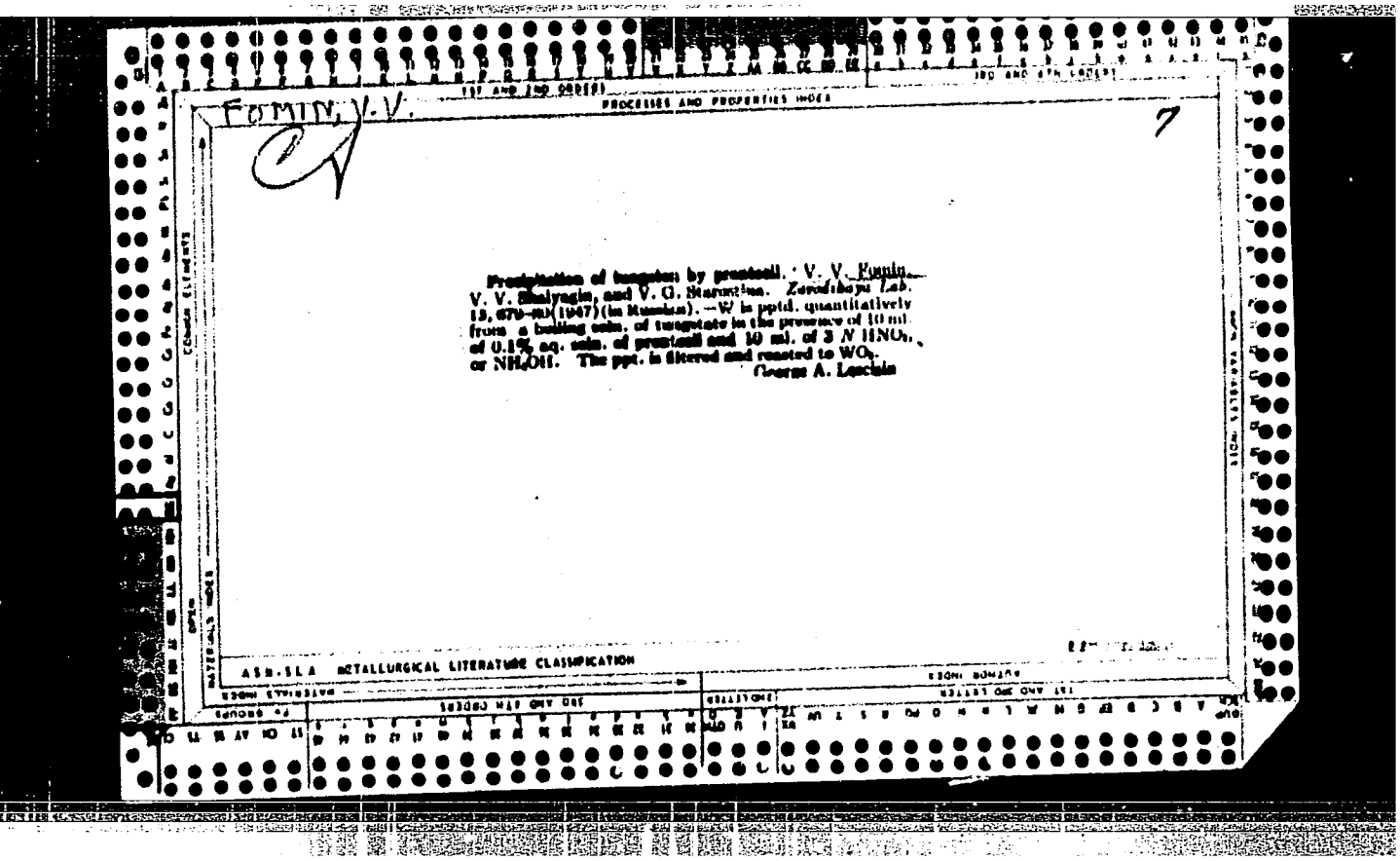
SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003

Card 2/2



A 53
BB

2940. Radioactivity Produced in Tantalum by Neutron Bombardment. V. Fomin and F. G. Houtermans. *Phys. Zeits. d. Sowjetunion*, 9. 3–3. pp. 273–274, 1936. *In German.*—The feeble radioactivity produced in Ta by neutron bombardment has a period of 200 ± 100 d. The intensity produced per hour in Ta is about 10^{-3} the saturation intensity of Ag and the β-rays emitted are extremely soft. Long periods are characteristic of elements in this region of the periodic table, those for Ir and La being two months and six days respectively. F. C. C.



FOMIN, V.V.

7

Precipitation of tungsten by pyrocatechol. V. V. Fomin, V. V. Shalygin, and V. G. Marantsa. Zavodskaya Lab. 13, 679–80(1947)(in Russian).—W is ppted. quantitatively from a boiling soln. of tungstate in the presence of 10 ml. of 0.1% aq. soln. of pyrocatechol and 10 ml. of 3 *N* HNO_3 or NH_4OH. The ppt. is filtered and roasted to WO_3.
George A. Leeckie

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

3

Slowing down of neutrons in liquid hydrogen. V. Fomin, F. G. Houtermans, A. I. Leipunskii and L. V. Shubnikov. *Physik. Z. Sowjetunion* 9, 696-8(1936). The curve representing the slowing down of neutrons from Rn + Be in liquid H, in which the intensity of the neutron beam passing through a spherical H absorber was plotted against the radius of the sphere, shows a satn. activity 30% of that reached in water. The satn. in liquid H is reached for smaller values of the product of the sphere radius and the ratio: liquid H d./H d. in H_2O than it is in H_2O, and the rise of the activity is slow for small sphere radii. An interpretation of these results is suggested. M. M.

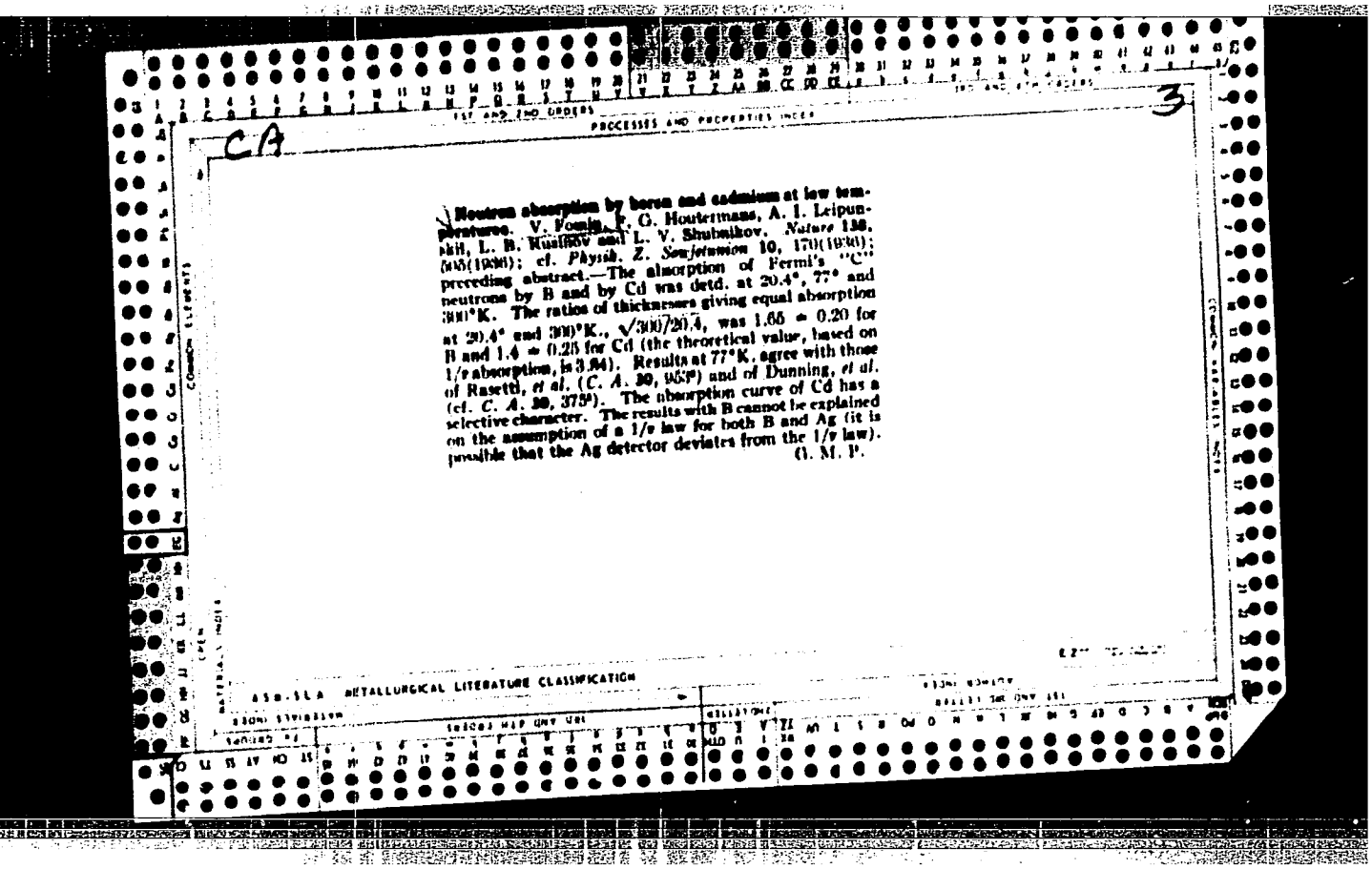
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

3

The absorption of thermal neutrons in silver at low temperatures. V. Fomin, F. G. Houtermans, I. V. Kurchatov, A. Leipunskii, L. V. Shubnikov and G. Shchepkin. *Physik. Z. Sowjetunion* 10, 103-5(1936); cf. *C. A.* 30, 8008[1].—The absorption of the *C*-group of neutrons in Ag with Ag as detector (long period, 2.3 min.) was detd. at varying temps. Either the energy distribution of the thermal energy of the neutrons of the *C*-group does not follow Maxwell's law or the 1/v law for the absorption of neutrons of the *C*-group is not valid with the long-period Ag as an indicator. Marie Farnsworth

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

3

Neutron absorption by boron and cadmium at low temperatures. V. Fomin, F. G. Houtermans, A. I. Leipunskiĭ, L. B. Rusinov and L. V. Shubnikov. *Nature* 138, 345(1936); cf. *Physik. Z. Sowjetunion* 10, 170(1936); preceding abstract.—The absorption of Fermi's "C" neutrons by B and by Cd was detd. at 20.4°, 77° and 300°K. The ratios of thicknesses giving equal absorption at 20.4° and 300°K., $\sqrt{300/20.4}$, was 1.65 ± 0.20 for B and 1.4 ± 0.25 for Cd (the theoretical value, based on 1/v absorption, is 3.84). Results at 77°K. agree with those of Rasetti, *et al.* (*C. A.* **30**, 965⁹) and of Dunning, *et al.* (cf. *C. A.* **30**, 375⁹). The absorption curve of Cd has a selective character. The results with B cannot be explained on the assumption of a 1/v law for both B and Ag (it is possible that the Ag detector deviates from the 1/v law). G. M. P.

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

Fomin, V. V.

USSR

Composition of a complex ion and its stability constants from the solubility curve. V. V. Fomin. *Zhur. Fiz. Khim.*, 27, 1280-6(1953); cf. Jonte and Martin, *C.A.* 46, 7853c. — The soly. (S) was measured of AgCl (I) in aq. solns. of HCl (II) and NaCl (III) and of $HgCl_2$ (IV) in III at 25°. Values of S are tabulated for I and IV as functions of the II (or III) concn. and can be found from the equations $S_I = 4.2 \times 10^{-4} c + 5.4 \times 10^{-7}$ and $S_{IV} = 8.7 \times 10^{-4} c$, where c is the initial concn. of chloride ion in soln. The calcd. instability const. of the $AgCl_2^-$ ion is 4×10^{-5}. — J. W. Lu, Jr.

FOMIN, V. V.

USSR.

Calculation of the heats of formation for inorganic compounds. V. V. Fomin. *Zhur. Fiz. Khim.* 27, 1689-92 (1953).—The formula $(Q_{AX'_n} - Q_{AX''_n})/(Q_{AX''_n} - Q_{AX'''_n}) = (Q_{BX'_n} - Q_{BX''_n})/(Q_{BX''_n} - Q_{BX'''_n})$, in which Q is the heat of formation of the compds. AX_n and BX_n, where A and B are atoms of metals and X is halogen atoms in the order of their increasing at. wts., can be used to det. the heat of formation of compds. when the heats of formation of 3 other compds. are known. The best results are obtained for elements (A and B) that have similar properties and dimensions. This formula can be used for compds. other than halides.

J. Rovtar Leach

62

Fomin, V.V.

USSR/Chemistry - Physical chemistry

Card 1/1 : Pub. 147 - 5/22

Authors : Fomin, V. V.

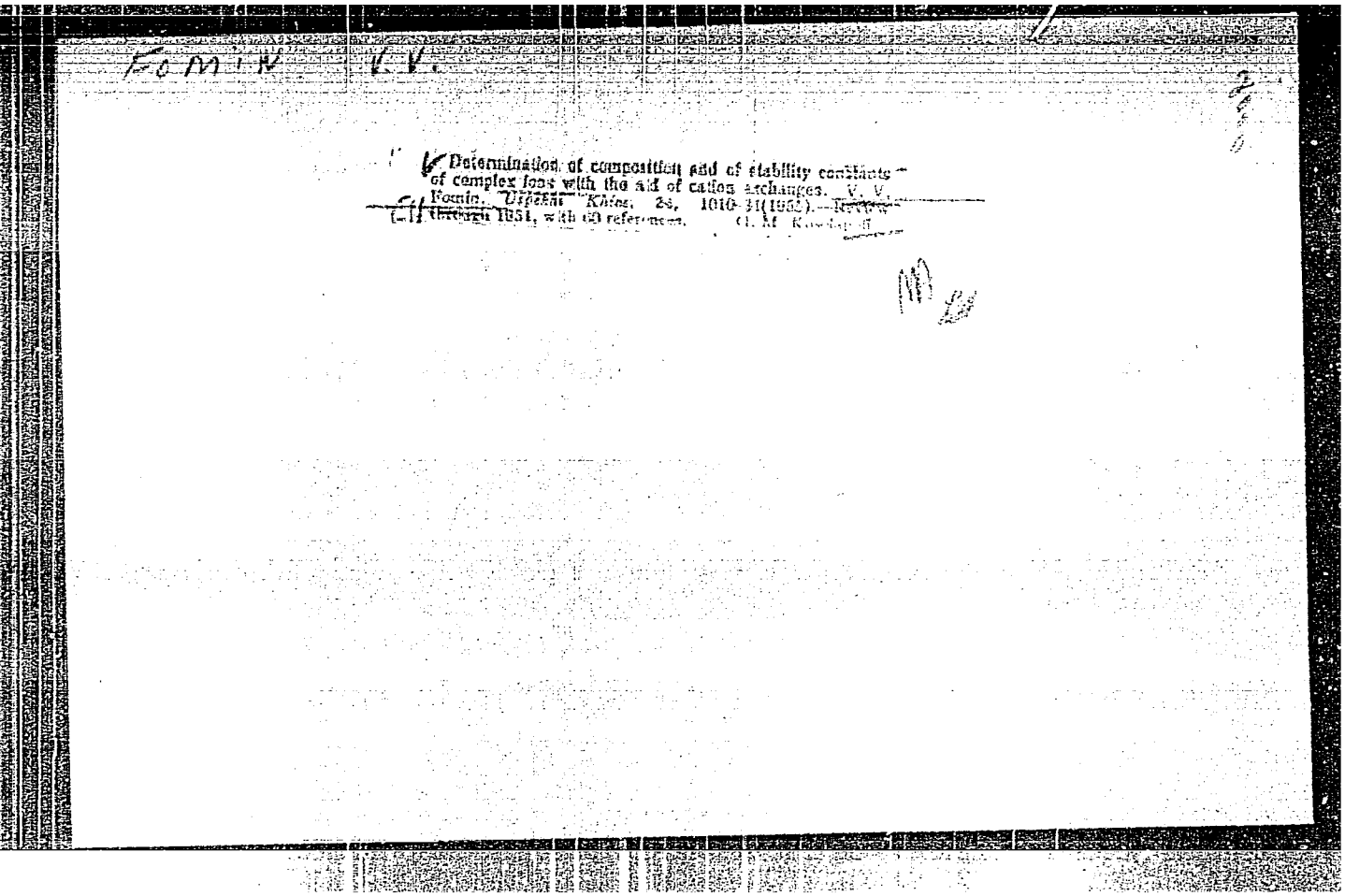
Title : Estimation of the heats of formation of inorganic compounds

Periodical : Zhur. fiz. khim. 28/11, 1896-1900, November 1954

Abstract : A method for the estimation of heats of formation of inorganic compounds is described. It was established that the heat of formation is determined mainly by the interatomic spaces and by the energies of the crystalline lattices. A method, for the calculation of the function of interatomic spaces in accordance with radii of the cation and anion and through the application of a simple equation for the crystalline lattice energy, is introduced. Fourteen references: 12-USSR; 1-German and 1-USA (1932-1953). Tables.

Institution : .....

Submitted : January 3, 1954



Determination of composition and of stability constants of complex ions with the aid of cation exchangers. V. V. Fomin. *Ukrain. Khim. Zh.* 26, 1010-31(1960).—Review through 1951, with 60 references.

FOMIN, V. V.

The determination of the composition and of the stability constant of complex ions from the solubility curve. V. V. Fomin. Zhur. Fiz. Khim. 29, 1728-9(1955); cf. C.A. 49, [illegible]; 50, 3841e.—The nature of the ions forming in the soln. of AgCl, and their stability consts., are detd. with the aid of tangents to the curve of log soly. of AgCl vs. log [X] at an angle of $n - m + 1/2$, where n is the no. of coordination groups and m the no. of anions in the simple AX_m salt. AgCl mols. and $AgCl_2^-$ ions were formed. The logs of the soly. product of AgCl and of the stability consts. of the AgCl and $AgCl_2^-$, are -0.74 ± 0.08, 3.26 ± 0.12, and 5.20 ± 0.12 resp. W. M. Sternberg

FOMIN, V.V

USSR/Chemistry - Analytical chemistry

Card 1/2 Pub. 147 - 11/22

Authors : Fomin, V. V.; Fedotova, L. N.; Sin'kovskiy, V. V., and Andreyeva, M. A.

Title : Study of cadmium chloride complexes by means of anionites

Periodical : Zhur. fiz. khim. 29/11, 2042-2047, Nov 1955

Abstract : A new method for the determination of stability constants of complex anions by means of anions, provided the solution contains one complex ion and complex cations and molecules, is described. The method is based on the application of the effective mass law to the ion exchange. It is shown that the distribution of Cd between the anionite and the potassium chloride solution at an ion force close to one corresponds to a certain

Institution : .....

Submitted : February 25, 1955

Card 2/2 Pub. 147 - 11/22

Periodical : Zhur. fiz. khim. 29/11, 2042-2047, Nov 1955

Abstract : equation for stability constants of complex Cd-ions. The complexity in retaining a constant ion force during changes in concentrations of ions participating in the complex formation is the main difficulty of the new method. Twenty references: 8 USA, 7 USSR, 1 Ital., 3 Scand., and 1 Germ. (1937-1953). Tables.

FOMIN, V.V.; MASLOVA, R.N.

Valence states of P^{32} which is formed in the reaction S(n,p)P.
Zhur.neorg.khim. 1 no.2:337-341 F '56. (MLRA 9:10)

(Phosphorus--Isotopes)

KNYAZEV, G.A.; FOMIN, V.V.; ZAKHAROV-NARTSISSOV, O.I.

Ion-exchange study of the dissociation of CoC_2O_4. Zhur.neorg. khim. 1 no.2:342-344 F '56. (MLRA 9:10)

(Cobalt oxalates) (Ion exchange)

FOMIN V.V.

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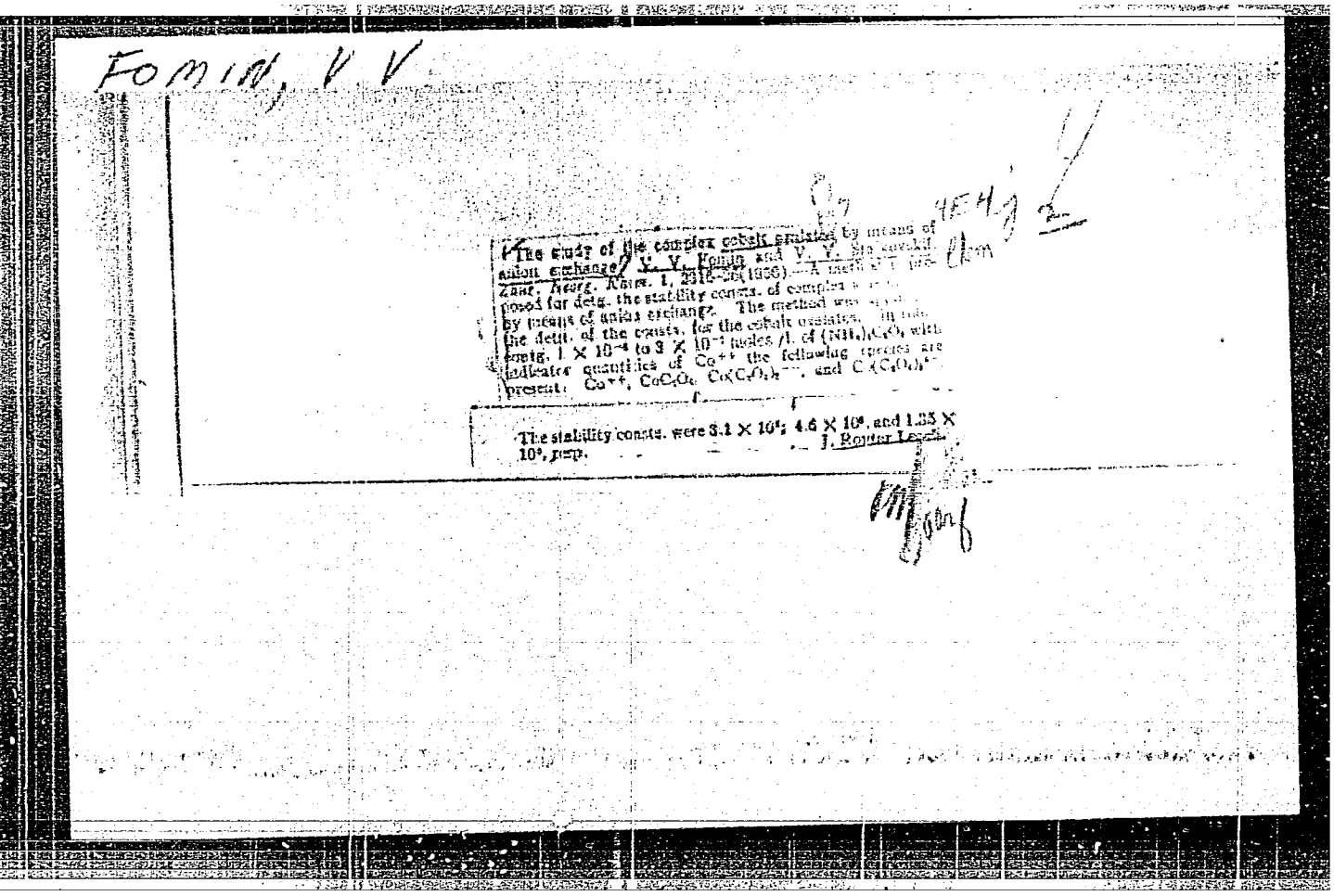
Determination of the stability constants for the Th [illegible] with tributylphosphate. V. V. [illegible] by extraction [illegible] *Zhur. Neorg. Khim.* 1, [illegible]

[illegible] complexing between Th and [illegible] [illegible] Th from a HNO_3 soln [illegible] [illegible] tributylphosphate dissolved in [illegible] [illegible] in the form of $Th(NO_3)_4 \cdot 2X$ (X is tributylphosphate) [illegible] [illegible] consts. of the following [illegible] ions were calcd. [illegible] 6 ± 0.5, $Th(NO_3)_2^{++}$ 13 ± 1, $Th(NO_3)_3^{+}$ [illegible] and $Th(NO_3)_4$ 5.8 ± 0.5. J. Rovtar Leach

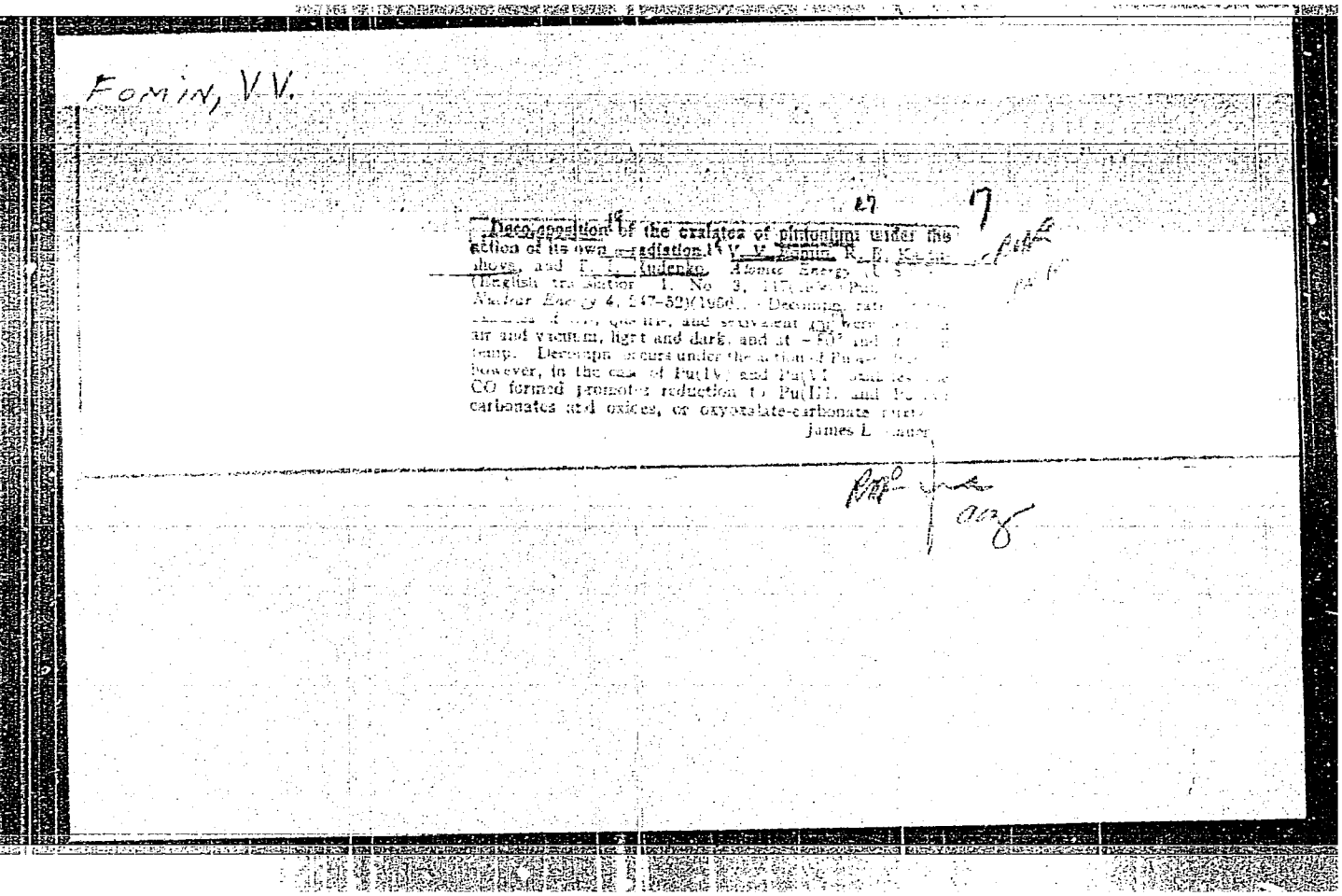


Fomin, V. V.

The study of the complex cobalt oxalates by means of anion exchange. V. V. Fomin and V. V. [illegible]. Zhur. Neorg. Khim. 1, 2315–26 (1956).—A method [illegible] posed for detg. the stability consts. of complex [illegible] by means of anion exchange. The method was [illegible] the deth. of the consts. for the cobalt oxalates. [illegible] consts. 1×10^{-4} to 3×10^{-1} moles/l. of $(NH_4)_2C_2O_4$ with indicator quantities of Co^{++} the following species are present: Co^{++}, CoC_2O_4, $Co(C_2O_4)_2^{--}$, and $Co(C_2O_4)_3^{---}$. The stability consts. were 3.1×10^6; 4.6×10^8, and 1.35×10^9, resp. J. Reuter [illegible]

Fomin, V. V.

Determination of the stability constants for the $Th(NO_3)_4^0$ ions. II. Experiments with macroquantities of thorium. V. Fomin, L. M. [illegible]
Khim. i [illegible]-tekhnol. [illegible] 51 [illegible]
The values of the stability consts. and the consts. for the formation of $Th(NO_3)_4 \cdot 2TBP$ (TBP is Bu_3PO_4), which were detd. in expts. using indicator quantities of Th, can be used to calc. the distribution coeffs. [illegible] quantities of Th



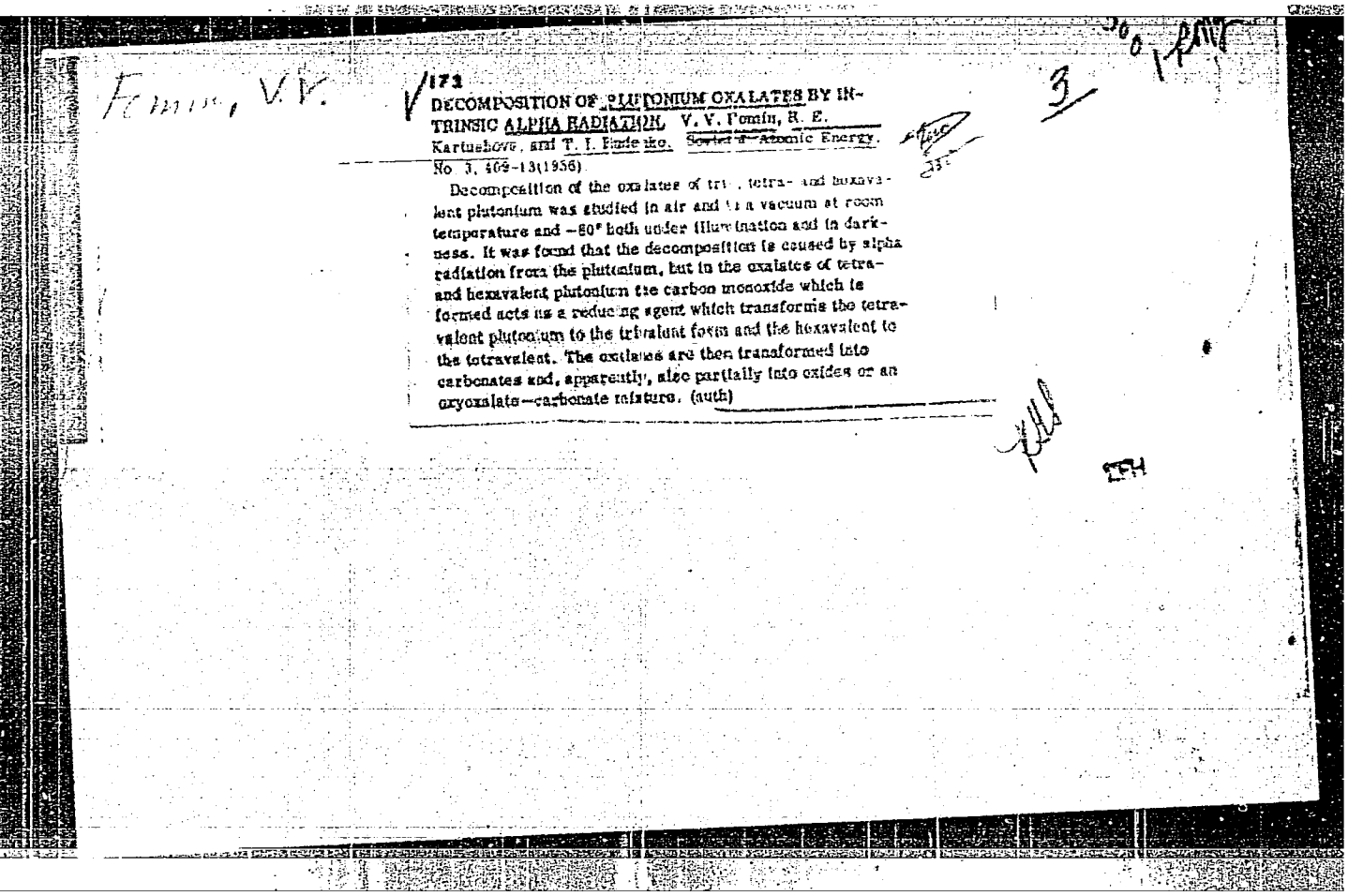
Fomin, V.V.

Decomposition of the oxalates of plutonium under the action of its own radiation. V. V. Fomin, R. B. Ka... above, and E. ... Lindenko. Atomic Energy (U.S.S.R.) (English translation) 1, No. 3, 117-... Nuclear Energy 4, 247-52(1956). Decomposition rate ... air and vacuum, light and dark, and at −50° and ... temp. Decompn. occurs under the action of Pu ... however, in the case of Pu(IV) and Pu(VI) ... CO formed promotes reduction to Pu(III), and ... carbonates and oxides, or oxyoxalate-carbonate ...

James L. ...

Pu

anal



Fomin, V.V.

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DECOMPOSITION OF PLUTONIUM OXALATES BY INTRINSIC ALPHA RADIATION. V. V. Fomin, R. E. Kartushova, and T. I. Timofeeva. Soviet J. Atomic Energy, No 3, 409-13(1956).

Decomposition of the oxalates of tri-, tetra- and hexavalent plutonium was studied in air and in a vacuum at room temperature and −60° both under illumination and in darkness. It was found that the decomposition is caused by alpha radiation from the plutonium, but in the oxalates of tetra- and hexavalent plutonium the carbon monoxide which is formed acts as a reducing agent which transforms the tetravalent plutonium to the trivalent form and the hexavalent to the tetravalent. The oxalates are then transformed into carbonates and, apparently, also partially into oxides or an oxyoxalate–carbonate mixture. (auth)

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FOMIN, V. V. et al

"PREPARATION AND PROPERTIES OF PLUTONIUM FLOURIDES".

By V. V. Fomin, et al.

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept. 1958.

78-3-4-23/38

AUTHORS: Alenchikova, I. F., Zaytseva, L. L., Lipis, L. V., Nikolayev, N. S., Fomin, V. V., Chebotarev, N. T.

TITLE: Investigation of the Physico-Chemical Properties of Plutonyl Fluoride (Izucheniye fiziko-khimicheskikh svoystv ftoristogo plutonila)

PERIODICAL: Zhurnal Neorganicheskoy Khimii,1958,Vol.3,Nr 4,pp.951-955(USSR)

ABSTRACT: The synthesis of plutonyl fluoride from hydrochloric acid solutions of plutonium-VI with liquid hydrofluoric acid was elaborated.
The plutonyl fluoride produced by this synthesis was analyzed as follows:
a) by chemical analysis
b) by determination of the state of valence of plutonium by means of the electron absorption spectrum
c) by the determination of the composition based on the U. R. -absorption spectrum
d) by X-ray structural analysis.

The chemical analysis showed that plutonyl fluoride has the following formula: PuO_2F_2.

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Investigation of the Physico-Chemical Properties of Plutonyl Fluoride

The electron and U.R. absorption spectra of plutonyl fluoride proved the presence of the PuO_2^{2+}-ion and the absence of the Pu-IV-ion.
The crystallization structure of plutonyl fluoride shows a rhombic lattice with the constants a = 5,797± 0,005 Å and $42^{\circ} \pm 3'$.
The X-ray density of PuO_2F_2 amounts to 6,50 g/cm^3.
The solubility of plutonyl fluoride in water at $20^{\circ}C$ amounts to 1,07 g/l. On the action of water on plutonyl fluoride a change of structure occurs. There are 5 figures, 2 tables, and 7 references.

SUBMITTED: October 20, 1957

SOV/78-3-9-18/38

AUTHORS: Fomin, V. V., Kartushova, R. Ye., Rudenko, T. I.

TITLE: The Determination of the Stability Constant of the Ions $Ce(NO_3)_x^{3-x}$ With the Aid of a Tributyl Phosphate Extraction (Opredeleniye konstant ustoychivosti ionov $Ce(NO_3)_x^{3-x}$ pri pomoshchi ekstraktsii tributilfosfatom)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 9, pp 2117-2127 (USSR)

ABSTRACT: The dependence of the distribution coefficient of trivalent cerium between a nitric acid solution and a solution of tributyl phosphate in benzene on the concentration of cerium, on the hydrogen concentrations, on the concentration of tributyl phosphate and on the nitrate ion was investigated. The radioactive isotope Ce^{144} was used as indicator in these investigations. In the investigation of the dependence of the distribution coefficient on the cerium concentration it was found that cerium does not polymerize in acid medium and the extraction does not depend on the concentration. The complex extracted has

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The Determination of the Stability Constant of the Ions $Ce(NO_3)_x^{3-x}$ With the Aid of a Tributyl Phosphate Extraction

the following composition: $Ce(NO_3)_3 \cdot 3TBPh$. It was found that the distribution coefficient of trivalent cerium increases with rising hydrogen ion concentration. In contrast to this no increase of the distribution coefficients takes place in the case of the presence of salting-out compounds, e. g. $LiNO_3$. The following complex ions exist in the aqueous solution: $Ce(NO_3)^{2+}$ and $Ce(NO_3)_2^{+}$. The stability constants of these compounds are the following: 11 ± 2,5 and 32 ± 7. The equilibrium constant for the equation $Ce^{3+} + 3NO_3^- + 3TBPh \rightleftarrows Ce(NO_3)_3 \cdot 3TBPh$ was calculated to be 1. There are 6 figures, 7 tables, and 20 references, 10 of which are Soviet.

SUBMITTED: October 2, 1957

Card 2/3

Fomin, V. V.

AUTHORS: Fomin, V. V., Vorob'yev, S. P., Andreyeva, M. A. 89-1-7/29

TITLE: Investigation of Complex Plutonium Oxalate Compounds by the Polarographic Method (Izucheniya kompleksnykh oksalatov plutoniya polyarograficheskim metodom).

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 1, pp. 57 - 62 (USSR).

ABSTRACT: The composition and constancy for tri- and quadrivalent complex plutonium ions in oxalate solutions was determined by the polarographic method. In a solution of potassium oxalate with a pH value of from 3,5 to 6,0 mainly $[Pu(C_2O_4)_4]^{-4}$ and also $[Pu(C_2O_4)_4]^{-5}$ are formed.

Conditions being as they are given, there exists for Pu^{+4} a well developed reversible reaction wave, which suffices for the qualitative polarographic determination of plutonium.
The oxidation reduction potential for this reaction in a 1 M solution of potassium oxalate is 0,205 V.
If the solutions have a pH value between 6 and 8, then two Pu^{+4} complexes exist at one and the same time.
From the data for the solubility of $[Pu(C_2O_4)_3]$ the instability constants for the complex ions $[Pu(C_2O_4)_3]^{-3}$ and $[Pu(C_2O_4)_4]^{-5}$ and from

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